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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): Riazi 3-11-3

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Signature _____

Typed or printed name _____

Application Number	Filed
09/398,502	September 17, 1999

First Named Inventor: Riazi et al.

Art Unit	Examiner
2616	Duc Chi Ho

Applicant requests review of the final rejection in the above-identified application No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided

I am the

- [ ] applicant/inventor
- [ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3 73(b) is enclosed (Form PTO/SB/96)
- [x] attorney or agent of record Registration number 36,597
- [ ] attorney or agent acting under 37 CFR 1 34. Registration number if acting under 37 CFR 1 34 _____

Kevin M. Mason
Signature

Kevin M. Mason
Typed or printed name

203-255-6560
Telephone number

March 5, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

- [ ] *Total of _____ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1 14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS **SEND TO: Mail Stop AF Commissioner for Patents P O. Box 1450 Alexandria VA 22313-1450**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicant(s):	Riazi et al
Docket No.:	3-11-3
Serial No :	09/398,502
Filing Date:	September 17, 1999
Group:	2616
Examiner:	Duc T. Duong
Title:	Method and Apparatus for Performing Differential Modulation over Frequency in an Orthogonal Frequency Division Multiplexing (OFDM) Communication System

MEMORANDUM IN SUPPORT OF
PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P O. Box 1450
Alexandria, VA 22313-1450

Sir:

The present invention and prior art have been summarized in Applicants' prior responses

STATEMENT OF GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1 through 22 are presently pending in the above-identified patent application. Claims 1-22 were rejected under 35 U.S.C §103(a) as being unpatentable over Sayeed (United States Patent Number 6,594,320 B1) in view of Barton et al (United States Patent Number 6,449,246 B1)

ARGUMENTS

Independent Claims 1, 7, 13 and 18

Independent claims 1, 7, 13, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sayeed in view of Barton et al. Regarding claims 1 and 7, the Examiner acknowledges that Sayeed fails to teach storing pilot tones, but asserts that Barton discloses a multicarrier access communication system, wherein pilot tones are used as null symbols (col. 11, lines 48-50). In the final Office Action, the Examiner asserts that the features upon which the Applicant relies (i.e., tone is a sinusoid of a particular frequency) are not recited in the rejected claims. The Examiner further asserts that Barton "used pilot tone and pilot symbol interchangeably as to meant [sic] the same function."

Applicants note that Barton teaches that, "in practical applications, carrier synchronization is achieved *using pilot-**tone**-aided or pilot-**symbol**-aided techniques*" (Col. 5, lines 51-53; emphasis added.) Thus, Barton distinguishes *pilot **tones** from pilot **symbols***. In the text cited by the Examiner, Barton teaches that, "for 'Symbol Timing and Carrier Frequency Offset Estimation', *the pilots are simply null symbols*, i.e. 0." (Col. 11, lines 48-50; emphasis added.) Applicants note that, in the same paragraph, Barton teaches that "*pilot **symbols*** are used for both 'Channel and SINR Estimation' and 'Symbol Timing and Carrier Frequency Offset Estimation.'" (Col. 11, lines 39-41; emphasis added.) Applicants, however, could find *no* disclosure or suggestion by Barton that the pilot symbols, or pilots, are pilot tones. (As understood by a person of ordinary skill in the art, a "tone" is a sinusoid of a particular frequency.) Independent claims 1, 7, 13, and 18 require storing or containing said differentially encoded symbols and ***one or more pilot tones*** to produce an analog signal centered at a desired carrier frequency.

Regarding the Examiner's assertion that the features upon which the Applicant relies (i.e., tone is a sinusoid of a particular frequency) are not recited in the rejected claims, Applicants note that the definition of a "tone" is well understood by a person of ordinary skill in the art. A tone, for example, is defined as a "sound of distinct pitch, quality, and duration." (See,

dictionary.com.) A person of ordinary skill in the art would therefore recognize that, in the context of the present invention, a tone is "a sinusoid of a particular frequency."

Applicants also note that a "symbol" is defined, for example, as a "16 bit unit of data." (See, The IEEE Standard Dictionary of Electrical and Electronic Terms.) Barton teaches the following:

> ***The symbols are complex, that is, each symbol has an in-phase component and a quadrature component, which for expository purposes can be considered to be the real and imaginary part of a complex symbol.*** Generally, the complex symbols for a range of M-ary constellations are generated and stored in the table; in this way, the table is versatile enough to handle variable-rate systems wherein each of a plurality of channels can be associated with a different M-ary constellation (e g , channel 1 may be 4-QAM, channel 2 may be 8-QAM, and so forth)
> (Col 9, lines 14-23; emphasis added.)

> To use the look-up constellation of FIGS 4C, 5, 6, or 7, each of the K-bit streams on each path 311, , 312 of FIG 3 serves as an ***input to the appropriate look-up table, and a complex symbol is emitted on each of the K output paths 321, . . . , 322 in correspondence to the input stream***. For instance, suppose that the constellation of FIG. 7 serves as a complex symbol look-up table; this constellation is depicted as 32-QAM storage array 800 in FIG. 8A. Path 801 is representative of each path 311, . . , or 312 of FIG 3.
> (Col 10, lines 58-66; emphasis added.)

> *Pilot symbols are used for both "Channel and SINR Estimation" and "Symbol Timing and Carrier Frequency Offset Estimation",* which are discussed below when a receiver illustrative embodiment is presented. ***The pilots for the latter are inserted once every F blocks, where F could be on the order 8 or 16, to be synergistic with the PACS multi-frame (8 frames, 20 ms). For "Channel and SINR Estimation", the pilots can be any non-zero symbol; for exemplary purposes, the pilots are chosen to be the constellation point representing the number 1.*** For "Symbol Timing and Carrier Frequency Offset Estimation", the pilots are simply null symbols, i.e. 0. The block diagram of FIG 9, which is a more detailed representation of inserter 330, shows an example with P=8 PAR reduction subcarriers and W=4 pilots with K=60; thus N=72.
> (Col. 11 lines 39-53; emphasis added.)

Regarding the Examiner's assertion that Barton "used pilot tone and pilot symbol interchangeably as to meant [sic] the same function," Applicants note that the Examiner provides no support for this statement. In light of Barton's statement that "carrier synchronization is achieved *using pilot-**tone**-aided or pilot-**symbol**-aided techniques" and other teachings*, and in light of the conventional definitions of the terms "tone" and "symbol" (see, the preceding paragraphs), a person of ordinary skill in the art would not read Barton as using pilot tone and pilot symbol interchangeably

Thus, Sayeed and Barton et al., alone or in combination, do not disclose or suggest storing or containing said differentially encoded symbols and one or more pilot tones to produce an analog signal centered at a desired carrier frequency, as required by independent claims 1, 7, 13, and 18.

Claims 6, 12, 17 and 22

Dependent claims 6, 12, 17, and 22 were rejected under 35 U S C. §103(a) as being unpatentable over Sayeed in view of Barton et al. Regarding claims 6 and 12, the Examiner asserts that Sayeed discloses the differential encoding 130 is performed with respect to consecutive sub-carriers in said OFDM system (FIG. 2; col. 4, lines 31-33).

Applicants could find no disclosure or suggestion in the text cited by the Examiner that the differential encoding/decoding is performed with respect to consecutive sub-carriers in a OFDM system. Claims 6, 12, 17, and 22 require wherein said differential encoding/decoding is performed with respect to consecutive sub-carriers in said OFDM system.

Thus, Sayeed and Barton et al., alone or in combination, do not disclose or suggest wherein said differential encoding/decoding is performed with respect to consecutive sub-carriers in said OFDM system, as required by independent claims 6, 12, 17, and 22.

Dependent Claims 2-6, 8-12, 14-17, and 19-22

Dependent claims 2-6, 8-12, 14-17, and 19-22 were rejected under 35 U S.C §103(a) as being unpatentable over Sayeed in view of Barton et al

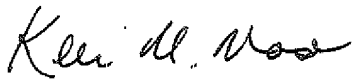
Claims 2-6, 8-12, 14-17, and 19-22 are dependent on claims 1, 7, 13, and 18, respectively, and are therefore patentably distinguished over Sayeed and Barton et al., alone or in combination, because of their dependency from independent claims 1, 7, 13, and 18 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

All of the pending claims, i.e., claims 1 through 22, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below

The Examiner's attention to this matter is appreciated.

Respectfully submitted,



Date: March 5, 2007

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